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U.S ARMY HEAVY BRIGADE RECONNAISSANCE

DURING OFFENSIVE OPERATIONS

A Monograph
by

Lieutenant Colonel Thomas C. McCarthy
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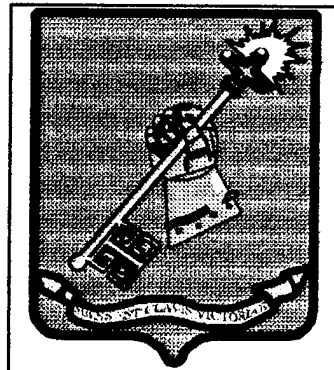
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ABSTRACT

U.S. Army Heavy Brigade Reconnaissance During Offensive Operations, by Lieutenant Colonel Thomas C. McCarthy, USA, 59 pages

This study examined what U.S. Army heavy brigades should accomplish when conducting reconnaissance during offensive operations, what they actually accomplish, and why there is a shortfall. Doctrinal literature from the capstone "how to" manual FM 100-5, Operations through FM 17-98, Scout Platoon establishes what brigade reconnaissance should accomplish. The 1987 RAND analysis, the 1988 CALL studies, NTC take-home packages from 1991-1993, the 1993 Tait Group papers and other DESERT STORM documents identify the discrepancy between expectation and performance.

The 1987 RAND study statistically correlated effective reconnaissance and successful offensive operations at the NTC. Reconnaissance during these operations was effective only 8 percent of the time. When reconnaissance was effective, offensive operations succeeded 70 percent of the time. The more assets the commander employed and the more time he gave the reconnaissance force to execute its tasks, the greater its chances for success.

The 1988 CALL studies concluded that 25 percent of reconnaissance missions at the NTC were effective. Successful offensive operations followed effective reconnaissance greater than 80 percent of the time. These studies found that R&S plan timeliness and scout platoon survivability were directly proportional to reconnaissance success.

The NTC trend from 1991 to 1993 reveals that the effective reconnaissance rate remains at 25 percent, but the correlation to successful offensive operations has risen to 90 percent. Commanders and staffs, especially S-2s, have problems in planning, preparing and supervising the execution of reconnaissance, partly explaining why it is not more effective. Commanders sometimes create ad hoc reconnaissance organizations under their control to improve results, but they generally lack cohesion and are difficult to sustain.

Deficiencies in doctrine, organization, equipment and training contribute to the problems brigades have in conducting effective reconnaissance. Doctrinal literature lacks detail, consistency, and realism. Task force scout platoons cannot use both aggressive and stealth reconnaissance techniques, see deep, and survive as currently organized and equipped. S-2 sections are too under-staffed in officers and soldiers to function efficiently. Institutional training for S-2s does not prepare them for the rigors of their job. Finally, heavy brigades do not train adequately at home station to produce cohesive and effective reconnaissance forces.

Commanders and staffs realize there is a causal relationship between effective reconnaissance and successful offensive operations. Despite this awareness, NTC and DESERT STORM performance demonstrates weaknesses in heavy brigade reconnaissance which can be attributed in some degree to the preceding deficiencies in doctrine, organization, equipment, and training. In light of these deficiencies U.S. Army heavy brigades are today only marginally capable of conducting effective reconnaissance during offensive operations.

CONTENTS

1. Introduction

Background and Significance

To the Department of Defense and the North Atlantic Treaty organization,

> Reconnaissance is a <u>mission</u> undertaken <u>to obtain information</u>
> [author's emphasis] by visual observation, or other detection
> methods, about the activities and resources of an enemy or
> potential enemy, or about the meteorologic, hydrographic, or
> geographic characteristics of a particular area.[1]

Reconnaissance is a <u>directed effort</u> to obtain <u>detailed</u> information.[2] It is the key to focusing combat power during all offensive operations.[3] The concept that reconnaissance is critical to successful offensive operations pervades U.S. Army doctrine. The capstone "how to fight" manual, FM 100-5, <u>Operations</u> says,

> Reconnaissance is a precursor to maneuver and fire . . .
> Knowing the enemy's location and activities is an underpinning
> of a unit's ability to conduct mobile, force-oriented battles
> . . . Successful and continuous reconnaissance by a variety
> of tactical . . . means is vital for the success of offensive
> operations . . . Successful reconnaissance normally precedes
> successful operations at all levels.[4]

This concept is nested in subordinate manuals. FM 17-95, <u>Cavalry Operations,</u> declares that for maneuver to be successful, the commander must "see" the battlefield. Reconnaissance units are the "eyes" of their commander. Successful reconnaissance reduces friction on the battlefield and allows the commander to make effective decisions faster than the enemy commander. "The successful execution of maneuver warfare continues to be the product of thorough reconnaissance."[5]

The division operations manual claims that the loss of initiative, equipment, or, most important, soldiers may be the consequence for reconnaissance failure.[6] The tactics and techniques manuals for brigade through company stress that without effective reconnaissance, the unit blunders into defending enemy units, making battlefield success unlikely.[7]

1

Problem Definition

As the Army decreases in size, the need to focus combat power increases in importance and with it, the need to conduct more effective reconnaissance. Unfortunately, a review of recent documents, articles, and reports reveals that U.S. Army heavy brigades are not very effective in conducting reconnaissance. Specifically, reports from Operation DESERT STORM suggest that heavy brigades experienced difficulties in gaining a clear and accurate picture of the enemy. Furthermore, these difficulties manifest themselves at the Combat Training Centers (CTC), where most brigades do not conduct effective reconnaissance. Several sources point out various weaknesses in tactical performance that degrade the heavy brigade's reconnaissance capability. More important, many observers think that these weaknesses reflect the existence of various deficiencies in the heavy brigade doctrine, organization and equipment, and training. If these deficiencies exist, the U.S. Army Training and Doctrine Command (TRADOC), which is responsible for these functions, should initiate actions to overcome the problem of ineffective reconnaissance.

Method and Scope

To determine the validity of this monograph's hypothesis, it is necessary to examine what U S. Army heavy brigades should accomplish when conducting reconnaissance during offensive operations, what they actually accomplish and why there is a shortfall. The monograph will examine in detail the nature and scope of the reconnaissance tasks that heavy brigades perform during offensive operations. The roles of the commander and his staff and the resources normally available to accomplish these tasks are discussed. The monograph will establish the pervasiveness and impact of the reconnaissance problem by evaluating the following documents: 1987 RAND analysis of reconnaissance at the National Training

Center (NTC), 1988 Center for Army Lessons Learned (CALL) reconnaissance studies, NTC take-home packages from October 1991 to March 1993, after-action reports by operation DESERT STORM participants, and the Gulf War Report conducted by Lieutenant General (Retired) Thomas Tait's study group.

Finally, the monograph identifies deficiencies in doctrine, organization, equipment, and training that are in some way responsible for the weaknesses in heavy brigade reconnaissance capability. Possible solutions to these deficiencies are considered. Comments by brigade commanders who have experience training at the CTCs or fighting during DESERT STORM attest to the accuracy and feasibility of the findings and recommendations.

II. Heavy Brigade Reconnaissance Operations

Introduction

The first part of this section describes the brigade commander and his staff's role in planning, preparing, and executing reconnaissance during offensive operations. The second part explains the fundamentals and methods of conducting reconnaissance operations. The third part articulates what the U.S. Army has established as standards of performance for units conducting reconnaissance. The fourth part explains Russian doctrine for countering U.S. Army reconnaissance operations. The final part lists the assets with which heavy brigades conduct reconnaissance.

Commander and Staff's Role in Reconnaissance

The brigade commander expects his reconnaissance forces to provide timely and accurate information so that he can focus his combat power at the critical time and place during offensive operations. In trying to accomplish this challenging task, he confronts an enemy who will

vigorously thwart his effort. Therefore, it is incumbent upon the commander to give his reconnaissance force the time and assets needed to accomplish its mission.

The brigade commander focuses the reconnaissance effort by stating clearly his intent, his priority intelligence requirements (PIRs), the reconnaissance objective, and the targets to be attacked.[8] His PIRs support the decisions he anticipates making during planning and execution of the operation. In the information age, these decisions have greater consequences because of an increase in the lethality and tempo of offensive operations.[9] As VII Corps commander during Operation DESERT STORM, General Frederick M. Franks, Jr., placed the responsibility for focusing reconnaissance on commanders:

> Commanders must focus intelligence. They must decide what they
> need to know for the operation to succeed. This includes
> establishing clear priorities for intelligence and targets.
> My goal was to limit my questions to six.[10]

Each brigade staff member has a role in planning, preparing, and executing reconnaissance. The brigade commander normally delegates tasking authority to his operations officer (S-3). The S-3 organizes the reconnaissance force and assigns subordinate units reconnaissance tasks in the operations order (OPORD). The fire support officer coordinates and rehearses fire support for the reconnaissance force. The personnel and logistics officers ensure that the reconnaissance force has the soldiers, supplies, and equipment to continue the mission over an extended period. The brigade intelligence officer (S-2), however, has primary responsibility for focusing and synchronizing the reconnaissance effort.[11]

The S-2 attempts continuously to answer three questions: "What do I know?; "What more do I need to know?"; and "How will I find out what I need to know?"[12] The intelligence preparation of the battlefield (IPB) process is the starting point for answering the first question. The

4

brigade S-2 develops a common intelligence mosaic by sharing information on the division intelligence and the brigade operations and intelligence (O&I) communications nets, and by eavesdropping on subordinate command nets, the nets of adjacent units, and the division cavalry squadron. From the division intelligence net, he not only receives intelligence that the division G-2 has processed from national, corps, and division sources, but also shares information horizontally with other division units.[13]

The brigade S-2 then focuses on the reconnaissance collection effort to find the missing pieces of information that the commander needs to make coherent and timely decisions during the offensive operation.[14] To answer the question, "What more do I need to know?" the S-2 develops information requirements (IRs).[15] He plans to fill these gaps in combat intelligence by integrating all brigade reconnaissance assets through the reconnaissance and surveillance (R&S) plan. The IRs that the commander feels are critical in accomplishing the mission are priority intelligence requirements; he includes them in his R&S plan.

The S-2 synchronizes the reconnaissance effort by sequencing the reconnaissance tasks into an orderly pattern. He must consider how and when the unit requires the information, and how long it will take subordinates to acquire it.[16] He then assigns a reporting schedule to monitor progress of the collection effort and redirect assets if necessary. Scouts render routine reports on the O&I while sending critical combat information via the command net. To resource the reconnaissance effort, the S-2 considers which PIRs/IRs subordinate units can provide with organic assets, and how he will augment them to enhance their effort. He determines which reconnaissance assets brigade retains. Finally, he generates requests for information (RFI) and sends them to division to acquire information beyond the capability of brigade assets.[17]

After closely coordinating with the brigade S-3, the S-2 recommends the reconnaissance tasks and required assets to the brigade commander, who alone orders his subordinate commanders' compliance. Indirect intelligence collection occurs when PIRs in the brigade operations order become implied tasks for the battalions. Nested PIRs through platoon level focus the reconnaissance effort. The brigade commander may also specify reconnaissance tasks in the R&S plan contained in the intelligence annex to the operations order. These tasks direct what information subordinate units are to collect and when the brigade requires it.[18]

Fundamentals and Methods

Successful reconnaissance operations reflect six fundamentals: place maximum reconnaissance forward; orient on the reconnaissance objective; report all information rapidly and accurately; retain freedom to maneuver; gain and maintain enemy contact; and develop the situation quickly.[19] To maintain reconnaissance for the duration of offensive operations and throughout the depth of the zone of action, brigade commanders normally use all available reconnaissance assets forward in zone. In most cases they use non-reconnaissance units to conduct rear security and flank coordination tasks. Commanders focus the effort with a terrain or enemy-oriented reconnaissance objective. Commanders visualize the battlefield through an uninterrupted flow of timely and precise combat information. Superior tactical agility and steadfast focus on the reconnaissance objective allow reconnaissance units to avoid decisive engagement while maintaining contact with the enemy. Gaining contact is more difficult and expensive in men and equipment, than maintaining contact once gained. Reconnaissance forces use techniques or drills to cause the enemy to reveal his size, composition, disposition and activities.[20]

Heavy brigades employ one of the following four methods to conduct offensive reconnaissance: reconnaissance patrolling, reconnaissance by fire, reconnaissance in force, and armed reconnaissance.[21] The first method relies on stealth and takes longer to execute. If there is insufficient time to conduct more methodical reconnaissance patrolling, the commander resorts to one of the last three methods. These are all considered aggressive reconnaissance because units are prepared to fight for information.[22] Historically, the U.S. Army has relied on aggressive reconnaissance, though it is usually more costly in lives and equipment. The most effective reconnaissance combines aggressive and stealth techniques with stationary observation posts (OPs). The aggressive element forces the enemy to react while OPs report the reaction.[23]

Reconnaissance Tasks

The mission training plan (MTP) for heavy brigades specifies many reconnaissance tasks and subtasks that it must accomplish before various offensive operations are successful.[24] In movement to contact, the advance guard must locate and fix the enemy forces, and then continue to develop the situation, allowing the brigade to deploy rapidly.[25] In the hasty attack the brigade must locate and define the size and composition of the enemy force accurately. Before the deliberate attack, the brigade must allow sufficient time for detailed reconnaissance. During exploitation, the brigade must maintain contact with the enemy and prevent it from reestablishing a coherent defense. It is impossible to satisfy the doctrinal standards for offensive operations without conducting effective reconnaissance.

The task force MTP delineates reconnaissance tasks in greater detail. During the meeting engagement, the scout platoon must identify the location and actions of the enemy for the task force to be

7

successful.[26] The assault task, critical to the attack, specifies two key reconnaissance tasks. The first is for scouts to detect accurately enemy locations, activities, composition, size, obstacles, and field fortifications before the lead company makes contact with the enemy. The second is for reconnaissance assets to find enemy weaknesses, locations, natural obstacles, antitank weapons, fire sacks, platoon positions, flanks, possible routes, overwatch positions and support by fire positions. It must accomplish this without decisive engagement or loss of more than 5 percent of combat strength.[27]

The Enemy Counterreconnaissance Effort

The brigade must accomplish the reconnaissance tasks just described against an active, thinking enemy who seeks to protect his force. Although counterreconnaissance tactics employed by future adversaries will be diverse, two distinct tactical styles exist. One style, influenced by the Russian Army, is still evident in former Soviet client states. The NTC opposing force (OPFOR) follows the Russian counterreconnaissance doctrine faithfully and is, perhaps, its most proficient practitioner. The U.S. Army and its allies influence the second style.

Russian-trained adversaries counter U.S. reconnaissance efforts differently depending on whether they are defending "out of contact" or "in contact". These adversaries prefer to defend out of contact because they can construct a deeper, more elaborate security zone. They defend in contact only when the enemy does not allow them the space or the time to build a stronger defense. The security zone for this defense is smaller and easier for U.S. forces to penetrate.

Russians defend "out of contact" with the enemy when there is no intent to resume offensive operations immediately. There is normally more time to prepare this defense, so it has greater depth, more obstacles,

8

better fighting positions and detailed fire planning.[28] The security zone

may extend 15 kilometers (see Figure 1). Arrayed in depth in this zone

are division reconnaissance patrols, a forward attachment of up to

battalion size from the division second echelon, regimental reconnaissance

patrols, and company-sized combat security outposts. The division and

regimental reconnaissance patrols find and maintain contact with enemy

reconnaissance forces, while the forward detachment astride the division

main avenue of approach and the combat security outpost astride the

regimental main avenue of approach strip away the enemy reconnaissance.

They force enemy units to deploy, attack, and expend indirect fires, thus

disorganizing his advance while deceiving him as to the first echelon's

location.

<center>Russian Security Zone For Defense</center>

<center>Out of Contact</center>

<center>Figure 1[29]</center>

The first-echelon battalions, likely to be the heavy brigade's

offensive objective, defends an area three to five kilometers wide and two

kilometers deep. Its mission is to repulse the attack with intense fires

and a counterattacking reserve. The second echelon of the regimental

<center>9</center>

defense is a battalion whose mission is to defeat any penetrations of the first-echelon. Every echelon has a reserve built around tank and antitank units positioned to block, counterattack, reinforce, or protect the rear area.[30]

Russian-trained armies defend in contact because of a culminated attack. The frontage corresponds to the zone of advance, or one and a half to two kilometers for a battalion. The formation is more linear, designed to facilitate a return to the attack. The security zone, if one exists, is 8 to 12 kilometers deep and occupied by two-to-four vehicle regimental patrols from the reconnaissance company. These patrols remain within the range of main body artillery. First-echelon battalions establish local security. The main defensive area units seek reverse slope positions, but often these positions are hastily prepared.[31] The counterreconnaissance threat is less formidable for defenses in contact, than for those out of contact.

An enemy trained by the U.S. Army or a NATO ally approaches counterreconnaissance differently. Brigades rely on assigned maneuver battalions to conduct counterreconnaissance operations. Brigades may augment them with ground surveillance radars (GSR) and combat observation/lasing teams (COLTs). The brigade may have operational control (OPCON) of electronic combat units to provide support to the entire defensive sector.[32] Fire support consists of the mortar platoon when the counterreconnaissance force deploys beyond direct support artillery range. Fire support team (FIST) and COLT vehicles direct precision-guided munitions when a fight occurs near the MBA. Engineers often construct minefields to surprise, confuse, and delay enemy

reconnaissance units. They also stop the enemy long enough to improve the effectiveness of direct and indirect fires.[33]

The counterreconnaissance execution task is to identify, locate, and destroy enemy ground reconnaissance.[34] To do this, task forces normally deploy two elements forward of the task force main battle area (MBA) under the command of a company commander. One element, usually the task force scout platoon, establishes a two layered screen line to identify, locate, and maintain contact with enemy reconnaissance elements. The second element has a guard mission and destroys the enemy reconnaissance by hasty attack or ambush. This guard force ranges from platoon to company size.

Assets Available

Although the divisional heavy brigade has no organic reconnaissance units, the assets upon which it can draw span the seven battlefield operating systems (BOS). The task force scout platoon, although specifically designed to conduct reconnaissance for its parent unit, is not the only unit available to the brigade commander for effective reconnaissance, and surveillance missions. In fact, the brigade tasks subordinate units to perform these missions and may request assets from division to support its R&S plan.

The intelligence BOS's primary reconnaissance asset is the high mobility multipurpose wheeled vehicle (HMMWV) task force scout platoon. As currently equipped, this ten-vehicle, 28-man platoon has a mix of 40 millimeter automatic grenade launchers and machine guns for self defense. It has passive night vision devices for use during periods of limited visibility, and conventional radios for reporting information. The platoon leader tailors his platoon based on how much time he has to accomplish the mission, how many tasks the battalion has assigned him, and how much space he has to reconnoiter. When the platoon leader has enough

time, he may dismount all or part of his platoon to infiltrate the enemy security zone. Infantry often augments the scout platoon during dismounted missions. If the platoon leader must remain mounted, he may deploy five two-vehicle squads, two five-vehicle sections, or any combination between these two extremes.

Because of the HMMWV's vulnerability, the scout platoon must conduct stealthy reconnaissance. In order to use a combination of stealth and aggressive reconnaissance techniques, the task force must either provide the scout platoon with additional maneuver BOS assets or give OPCON of the platoon to a larger reconnaissance force.[35] A mechanized infantry, a tank, or an attack helicopter company might be the basis of a larger reconnaissance force.[36]

External to the brigade, the division may give the brigade OPCON of a ground cavalry troop for an offensive operation. This cavalry troop with its Cavalry Fighting Vehicles (CFVs) (sometimes augmented with tanks) and mortar section provides an aggressive reconnaissance capability. The division military intelligence (MI) battalion provides GSR teams to work for brigades on an habitual basis. Often, the MI battalion sends an electronic warfare team with signal collecting, jamming and direction finding capability as well. For some offensive operations the division may provide the brigade tactical air reconnaissance or unmanned aerial vehicle (UAV) sorties to collect information on specific targets.

The direct support artillery battalion has several COLTs and FISTs available to provide digital fire direction, lasing, and night vision capability for the reconnaissance force. The aviation brigade may also provide an OH-58D helicopter to enhance the heavy brigade's night observation and fire direction capability. Task force mortar sections or platoons OPCON to the reconnaissance force can extend the force's range

12

beyond that of direct support artillery. The brigade air liaison officer (ALO) can provide combat information on enemy activities deeper in the brigade's zone through aircraft in-flight reports.

The mobility and survivability and air defense BOSs have assets that can contribute to the reconnaissance force mission. The direct support engineer battalion provides engineer reconnaissance squads to the heavy brigade for expertise in terrain, obstacle, and structure reconnaissance. The air defense battery has forward observing teams that can assist in the reconnaissance effort. Sometimes STINGER surface-to-air missile teams accompany the reconnaissance force to protect it from air counter-reconnaissance, or establish air ambushes for the brigade. Division often sends sections from the chemical reconnaissance platoon to work with brigades. Brigades normally augment their task forces with these valuable assets.

The battle command and combat service support (CSS) BOSs assist in the reconnaissance effort as well. The battle command BOS supports successful reconnaissance in two ways. First, liaison soldiers obtain intelligence from reconnaissance forces in adjacent zones. Second, radio retransmission or relay teams, controlled by either the reconnaissance force or the brigade, ensure continuous communications throughout the operation. The CSS BOS assists reconnaissance both directly and indirectly. It supports the reconnaissance force directly with specially assembled logistic packages (LOGPACS) that enable the force to stay far enough forward to do the mission. Task forces can assign reconnaissance tasks along the supply route to the LOGPACs. Indirectly, enemy prisoners of war, refugees, and local inhabitants are all sources of enemy and terrain information in the brigade area of operations. Also, aerial

resupply crews can perform reconnaissance tasks if the S-2 briefs the crew properly.

Summary

Brigade commanders expect timely and accurate information from reconnaissance forces. They focus the intelligence effort through selection of PIRs and reconnaissance objectives. Although the entire staff plays a role in reconnaissance, the S-2 is first among equals. The S-2 conducts IPB, develops information requirements, and synchronizes the collection effort through the R&S plan. The S-2 and S-3 advise the commander on how to resource this plan.

Reconnaissance forces are effective when they apply maximum effort forward, orient on an objective, report information accurately, retain freedom of maneuver, gain and maintain enemy contact, and develop situations rapidly. They do this when conducting patrols, reconnaissance by fire, reconnaissance in force, and armed reconnaissance. The MTPs specify that brigades and task forces must conduct effective reconnaissance to be successful in offensive operations. Because potential adversaries will contest U.S. reconnaissance efforts vigorously, brigades must employ complementary assets from all seven battlefield operating systems to ensure success.

III. The Reconnaissance Problem

Introduction

There is a discrepancy between what brigade commanders expect their reconnaissance effort to do for them and what it actually accomplishes. This section establishes the pervasiveness of the offensive reconnaissance problem by examining a RAND analysis, CALL studies, NTC observations, and Operation DESERT STORM experiences. The impact of inadequate staff

reconnaissance planning, preparation, and supervision and reconnaissance
force execution is considered.

RAND Analysis of Reconnaissance Performance at the NTC

In 1987, the U.S. Army commissioned Martin Goldsmith of the RAND
Corporation to analyze the linkage between reconnaissance and successful
offensive operations. Goldsmith analyzed core instrumentation subsystem
tapes, after-action review tapes, and take-home packages from 100 National
Training Center offensive operations.[37] He concluded that there was a
strong correlation between effective reconnaissance and successful
offensive operations, that reconnaissance was more successful in
deliberate attacks than in movements to contact and hasty attacks, and
that offensive reconnaissance performance was poor.[38]

To discover the causes of these results, Goldsmith devised three
data cards with critical reconnaissance tasks and information derived from
doctrinal manuals and NTC observer/controller (O/C) comments. The first
card evaluated offensive mission success. Successful missions complied
with commander's intent, secured terrain objectives, destroyed enough
enemy to render his defense incoherent, and preserved sufficient combat
strength to continue the mission. If both sides contested a terrain
objective, or neither side had coherent combat power at the end of the
battle, Goldsmith called it a standoff. Failure was simply the inverse of
success.[39]

The second data card's purpose was to measure the scout platoon's
reconnaissance success in the objective area, along the axis of advance or
zone of action, and beyond the objective. It also determined which steps
the task force and scout platoon took to plan, prepare, and execute the
reconnaissance mission. Goldsmith considered reconnaissance successful
when reconnaissance forces gained knowledge of enemy defensive positions

15

and obstacles, and communicated this information to the task force (no matter what the task force did with it).[40] He computed the percentage of reconnaissance tasks accomplished.

The third data card was a reconnaissance asset utilization matrix that identified which assets the task force used to accomplish reconnaissance tasks. RAND derived field data from 63 battles by 14 task forces. O/Cs filled out all cards while preparing for their AARs.[41]

The field data revealed that reconnaissance preceding all offensive operations was effective only 8 percent of the time. Seventy percent of offensive operations succeeded when the reconnaissance mission was effective. Conversely, when reconnaissance was ineffective, offensive operations succeeded only a quarter of the time (see Table 1, Appendix A).

There were two statistically significant factors that affected the success of offensive reconnaissance: time and asset utilization.[42] The sooner the staff disseminated the R&S plan, the more time there was to rehearse it and perform the mission. The more mission time the reconnaissance force had, the more stealth it employed. The stealthier it was, the more likely it survived, and the more reconnaissance tasks it performed. The more tasks it performed, the greater the mission success. Time and offensive reconnaissance success were strongly correlated.[43] Unfortunately, reconnaissance forces received R&S plans before execution only 42 percent of the time. The reconnaissance force rehearsed internally only 19 percent of its missions.[44] Pressed for time, reconnaissance forces avoided enemy contact only a quarter of the time (see Table 2, Appendix A).

Only a third of the reconnaissance missions established OPs in time to help the commander focus his combat power on the objective. Even fewer, 6 percent, provided surveillance beyond the objective.[45] This

16

finding is significant for two reasons. First, the OPFOR, whose reconnaissance efforts succeed more than three quarters of the time, claim that 90 percent of their combat intelligence comes from stationary OPs rather than through aggressive reconnaissance techniques.[46] Second, when task force scouts do not accomplish their mission, brigade commanders must rely on division assets to see the objective. In many cases these assets are not responsive enough to the needs of commanders, preventing them from focusing combat power on the objective, or detecting a second echelon counterattack in time to react decisively.

The RAND data demonstrated the value of adding non-scout assets to the reconnaissance effort. Units used the following non-scout assets during the time of the RAND study: engineer, ground surveillance radar, infantry, forward observers, aviation, and armor.[47] The biggest payoff from non-scout assets came from engineers who assisted with locating, breaching, and marking obstacles. Statistically, reconnaissance forces performed these tasks poorly. This problem was more pronounced along the axis of advance than in the objective area where the brigade normally focused its reconnaissance effort[48] (see Table 3, Appendix A). Goldsmith suggested that the tenacity with which the OPFOR guarded its obstacle system caused the low overall success rate.[49] Breaching improved when the reconnaissance force had more time to operate.

Unfortunately, the RAND study did not correlate the employment of other non-scout assets with reconnaissance mission success. It did record the frequency of their use in various reconnaissance tasks. After engineers, ground surveillance radar was the most used non-scout asset. Units employed infantry in the reconnaissance role about a third of the time. Surprisingly, artillery forward observers directed fires for the reconnaissance force only 21 percent of the time.[50] Goldsmith detected a

reluctance by commanders to employ aviation in a reconnaissance role for fear of losing these valuable assets. He suggested that commanders weigh the reconnaissance payoff versus risk carefully.[51] Brigades never provided, and task forces never requested, signal or electronic warfare support for the duration of the RAND study.[52]

CALL Analysis of Reconnaissance Performance at the NTC

CALL personnel at the NTC continued to maintain RAND statistics for a year following the publication of the reconnaissance study. The goal was to determine whether the emphasis the NTC was placing on reconnaissance during rotations was having any effect. The results were mixed.

When CALL completed its study in 1988, units were still conducting effective reconnaissance for a quarter of the offensive missions only. The success rate of a deliberate attack following effective reconnaissance rose from 73 to 83 percent. Unfortunately, the failure rate following failed reconnaissance rose as well, from 76 to 90 percent. CALL, unlike RAND, correlated timely R&S plans to successful attacks. It determined 73 percent of units disseminating timely R&S plans win, while 82 percent of those who do not, lose.[53]

CALL conducted a second study in 1988 concerning scout survivability. After analyzing 109 task force battles, it concluded that the 50 percent average casualty rate for scout platoons remained constant despite the scout platoon organization change from CFVs to HMMWVs.[54] It claimed that the issue was stealth. The enemy, visibility, mission, time allowed to execute the mission, and scout training determined how stealthy scouts were. The primary problem was training. Scouts failed to find targets before the enemy saw them; they carelessly constructed OPs; they often did not dismount, or dismounted within the enemy's weapons'

effective range; and they concealed their vehicles poorly. The OPFOR

killed scouts primarily by direct fire, but also used artillery and aerial

counterreconnaissance.[55]

Recent Reconnaissance Trends

While the RAND and CALL studies concentrated on execution at the

task force and scout platoon level, NTC take-home packages reveal how

brigade and task force staffs plan and prepare, as well as supervise the

execution of reconnaissance. From October 1991 to March 1993, the rate of

successful reconnaissance remained consistently low at 25 percent.[56] The

correlation of effective reconnaissance to successful offensive operations

rose to 90 percent.[57] Each member of the staff is partly responsible for

the low reconnaissance success rate. The S-2 who produces the R&S plan,

the S-3 who tasks assets to execute it, and the S-1 and S-4 who sustain

the effort, all fall short at the NTC.

Planning begins with the commander and S-2's selection of PIRs. The

PIR selection process requires an understanding of both enemy and friendly

strengths and weaknesses. S-2s at the NTC lack professional knowledge of

both.[58] S-2s do not comprehend the OPFOR, their enemy at the NTC. They

do not know the OPFOR's counterreconnaissance capability or actions, his

reaction to contact, or his firepower and maneuver options. S-2s do not

understand OPFOR weaknesses and vulnerabilities or where to search for

gaps in his defense.[59] Consequently, S-2s recommend PIRs that are too

general and too numerous. Often, commanders approve the PIRs without

refinement. The result is an R&S plan which lacks focus. The brigade

intelligence BOS O/C summarized the trend in 1993 with this observation:

> The S-2's continue to struggle with their roles in the BCT
> [brigade combat team] . . . A vision of the battlefield and
> what the commander needs to know, CCIR [commander's critical
> information requirements], PIR and IR, remains a bridge too
> far for IEW [intelligence and electronic warfare] BOS.[60]

19

Brigade S-2s know little more about their own forces' capabilities and limitations. Beyond habitual relationships (GSR section, MI team, etc.), S-2s rarely request intelligence or reconnaissance-asset augmentation from division. Brigade S-2s have trouble identifying the optimum asset to cover specific targets. They rely on subordinate task forces to conduct reconnaissance. Similarly, task force S-2s rely too much on their scout platoons to accomplish reconnaissance tasks. S-2s overwork scout platoons while neglecting other reconnaissance-capable assets. Because S-2s request too few reconnaissance assets, redundancy for critical named areas of interest (NAIs) is usually not possible.[61]

S-2s display a ". . . fundamental misunderstanding of the R&S plan management and mechanics."[62] The R&S plans lack detail concerning expected time and enemy activity in each NAI. They fail to consider the exact location, composition, and anticipated action of the counterreconnaissance force. The R&S plans do not ensure continuous reconnaissance throughout the depth and time of the offensive operation. S-2s rarely send requests for information (RFI) to division for those reconnaissance tasks the brigade can not accomplish. More than half of the time R&S plans continue to be disseminated after the reconnaissance force has deployed.[63] This lack of timeliness prevents these forces from adequately preparing for their mission.

Reconnaissance forces have difficulty in maintaining continuous communications. S-2s lose control of reconnaissance efforts during battle because of poor communications, and inefficient tactical operations center (TOC) procedures. Half the time, S-2s lose communications with the reconnaissance force leader before mission completion. Sometimes this is because he is a casualty, but often it is because of distance or intervening terrain. Neither the RAND study nor the subsequent take-home

packages record radio retransmission or relay ever being incorporated into reconnaissance planning.[64]

When communications are continuous, S-2s face a different problem. They are seldom able to deduce the enemy's dispositions, activities, and intent from the deluge of combat information reports sent via radio. Reports are often late, imprecise, and contradictory.[65] Consequently, S-2s cannot assist commanders in visualizing the battlefield. Commanders who are unsure about the enemy situation react slowly or indecisively.

The failure of S-2s to supervise adequately their own section operations affects the information collection effort. Average brigade and task force intelligence sections are 80 percent of authorized personnel strength.[66] This places a premium on efficiency. The trend shows the opposite: brigades do not enforce O&I radio net discipline, they only passively monitor the division intelligence net, shift leaders keep haphazard journals, there is poor continuity between shifts, and brigades produce substandard intelligence products.[67] Overworked S-2s fail to focus on planning reconnaissance for the upcoming mission and lose control of the effort in progress.

Brigade commanders and S-3s offer little assistance to S-2s in resourcing or integrating R&S plans. Despite their understanding of the low reconnaissance success rate and its effect on the overall offensive mission, commanders and S-3s are reluctant to provide the assets necessary to ensure success. Task force commanders and S-3s rarely assign reconnaissance tasks to maneuver companies (mechanized infantry, armor, or, when available, aviation).[68] Seldom do R&S plans address reconnaissance force regeneration. During the battle, commanders and S-3s do not replace destroyed reconnaissance assets quickly enough to avoid loss of tempo.[69] The replacement units lack training in reconnaissance

techniques and often become casualties rapidly. Inadequate resourcing inhibits continuous reconnaissance. S-3s do not synchronize R&S plans with schemes of maneuver or "deconflict" control measures.[70]

S-1s and S-4s do not plan and execute the sustainment of the reconnaissance force over time (duration of NTC rotations). S-1s usually do not anticipate the number of scout and MI soldier casualties by requesting sufficient replacements before battle. Even when augmented scout platoons approach companies in size, S-4s seldom tailor support to compensate for the platoon's inadequate logistics infrastructure. S-1s and S-4s rarely synchronize the assembly of replacements and supplies so that LOGPACs can be positioned at the right place and time to support a continuous reconnaissance effort.[71]

The problem brigades have sustaining the reconnaissance effort at the training centers manifested itself during DESERT STORM. Because of the distance over which units attacked during operation DESERT STORM, brigades had trouble keeping their reconnaissance forces resupplied. To maintain the tempo and stay fueled, the commander of a divisional cavalry squadron attached to a brigade changed his task organization. He divided in half his one organic CFV-equipped cavalry troop and integrated tanks from an attached tank company.[72] This enabled him to conduct continuous operations by refueling one troop while the other continued the mission.[73] The disadvantage of this "leap frog" technique was that no more than half the squadron was actively reconnoitering at a time.

Inadequate preparation has a greater impact on reconnaissance success at the NTC than the problem staffs have with planning. While brigades and task forces sometimes rehearse reconnaissance before the first battle of the rotation (the first NTC mission), O/Cs rarely observe physical rehearsals between battles.[74] Rehearsals, when units do conduct

22

them, are not tied to the decision support template. S-2s do not restate PIRs, reiterate the enemy most probable course of action, clarify NAIs, or discuss reporting procedures. S-3s do not review the scheme of maneuver, practice regeneration, ensure the distribution of reconnaissance taskings is equitable, or resolve graphics discrepancies. Fire support officers do not explain fire support relationships, special procedures, or fire coordination measures. Signal officers do not discuss long-range communication and troubleshooting contingencies. S-1s and S-4s are not present to rehearse special arrangements to sustain the force. When staff members are present, they do not participate as experts on the actions of their OPFOR counterparts.[75]

Because commanders and staffs do not resource reconnaissance forces adequately, reconnaissance forces must operate continuously making it difficult to assemble and conduct physical rehearsals. Often augmentation from higher headquarters arrives too late to participate in a physical rehearsal. Brigade S-2s occasionally practice the alternative, radio rehearsals between task force S-2s and reconnaissance forces, but not with the entire command and staff. O/Cs notice that when rehearsals occur, the chances of reconnaissance success improve significantly.[76]

When not preceded in the zone of action by the division cavalry squadron, the brigade reconnaissance force is the first to face the enemy's security zone. This is the usual scenario at the NTC. Unfortunately, reconnaissance forces cannot penetrate the security zone, survive the counterreconnaissance fight, reach the objective area, and see deep. HMMWV-equipped task force scout platoons do not survive when time constraints or the OPFOR compels them to use aggressive techniques. The CFVs and the M113 family of vehicles are too loud to be stealthy, thereby

enabling the OPFOR to detect and ambush them. The 50 percent survival rate is the same for both tracked and wheeled vehicles.

To correct the offensive reconnaissance problem, some brigade and task force commanders experiment with ad hoc organizations to perform this critical mission. Commanders create these organizations to be responsible directly to them. The problem with ad hoc scout units is threefold: brigade commanders rely more on them than other available assets; ad hoc units lack training proficiency; and they are difficult to sustain.[77]

One brigade employed an ad hoc reconnaissance organization at the NTC which provides an example of the first two of these problems. The brigade deployed the ad hoc force between five and 15 kilometers in front of the lead battalion to bridge the gap between task force scout platoons and division cavalry. They even employed UAV "Pointer" to extend their range. The brigade commander believed the reports of his ad hoc organization without investigating why information he was receiving from the task forces was contradictory. Although the task forces had a more accurate picture of the enemy, the brigade commander believed his ad hoc unit because the information it sent was analyzed directly by his S-2. The hand off of NAIs from the ad hoc force to the task forces was just as troublesome as from division cavalry to the task forces. The ad hoc force had not trained enough with other reconnaissance units of the heavy brigade. Thus, despite the commander's best intentions, the cohesion and effectiveness of the brigade's reconnaissance and surveillance operations did not improve.[78]

Many task forces and some brigades created ad hoc reconnaissance organizations during DESERT STORM. One well-documented, typical example experienced sustainment problems. A heavy task force placed the scout platoon, a tank platoon, a mechanized infantry platoon, and an engineer

24

section under the command of the headquarters company commander.[79]   The wheeled scout platoon maintained flank coordination while the tanks and BFVs conducted a zone reconnaissance.[80]   The ad hoc force was successful initially in locating the enemy and focusing the attack.   To maintain a mobility differential over the main body, however, the ad hoc force required more fuel than a normal company.   Unable to support the ad hoc force logistically, the task force disbanded it.[81]

IV. Deficiencies in Doctrine, Organization, Equipment, and Training

Introduction

This section explains why heavy brigade reconnaissance is ineffective. It examines deficiencies in U.S. Army doctrine, organization and equipment, and training that are in some way responsible for weaknesses in heavy brigade reconnaissance capability. Solutions are considered for each area.

Doctrine

Doctrinal literature has improved since the 1987 completion of the RAND study by stating clearly that commanders are responsible for driving and focusing the reconnaissance and intelligence process. Doctrine emphasizes reconnaissance and its linkage to success in offensive operations. Recent publications emphasize this linkage more than those prior to 1993. Three problems persist.   R&S plan explanation is not comprehensive enough in any document to guide S-2s in producing an effective product.   "How to" manuals do not explain in detail how units are to conduct reconnaissance using the assets available to a divisional heavy brigade.   The associated MTPs lack reconnaissance subtasks and establish unrealistic performance standards. Finally, the stealth versus aggressive issue remains unresolved.

FM 100-5 clearly makes intelligence the responsibility of the commander with the S-2 as his "executive agent." Unfortunately, this document mentions reconnaissance only five times. It makes the connection between effective reconnaissance and successful offensive operations, but explains the former only in the context of force protection.[82] The two chapters "Fundamentals of the Offense" and "Planning and Conducting the Offense" mention reconnaissance only once and then only along the route.[83] For a capstone document that sets the tone for subordinate manuals, FM 100-5 fails to emphasize the importance of reconnaissance.

Although the best discussion of offensive reconnaissance appears in FM 17-95, Cavalry Operations, this manual has three shortcomings. First, despite its importance to reconnaissance mission success, the discussion of R&S planning lacks detail.[84] Second, the manual does not explain how corps' cavalry regiment transfers targets to divisional cavalry squadrons, or how squadrons hand off targets to task force scouts in heavy brigades. Third, it does not address how brigades conducting supporting attacks reconnoiter for themselves when a cavalry organization does not precede them in their zone of action.

The brigade "how to fight" manual, FM 71-3, Armored and Mechanized Infantry Brigade, provides insufficient information on R&S planning, reconnaissance asset allocation, and reconnaissance execution during movements to contact.[85] The latter is the most significant flaw.[86] According to the manual, the brigade security force

> conducts reconnaissance, develops the situation, destroys enemy reconnaissance elements, secures key terrain, reports, and (if possible) breaches obstacles, and prevents unnecessary or premature deployment of the main body of the brigade.[87]

The diagram FM 71-3 uses to illustrate the brigade movement to contact formation shows the forward security force without a scout platoon (see

26

Figure 2). The scout platoon should be the element of the forward

security force which "accurately locates and defines the size and

composition of the [main] enemy force," while the tank and mechanized

infantry platoons destroy the enemy reconnaissance forces.[88]

Heavy Brigade Movement to Contact Formation

Figure 2[89]

ARTEP 71-3 MTP addresses reconnaissance in only one offensive

operation. Specifically, sufficient time and resources for detailed

reconnaissance are conditions for the deliberate attack.[90] There is no

mention of reconnaissance requirements before movement to contact or hasty

attack. Another omission is the lack of a requirement for an R&S

rehearsal.[91]

Two tasks in ARTEP 71-2-MTP have major deficiencies: "fight meeting

engagement" and "assault". To fight a meeting engagement, the scout

platoon must locate and report enemy actions and obstacles early enough

for the advance guard (security force) to develop a scheme of maneuver and

deploy before contact. It must maintain contact with the enemy until relieved, and collect information on deeper enemy positions and formations.[92] The manual does not describe how HMMWV scouts are to move far enough in front of the advance guard to provide it reaction time. The nature of movements to contact almost compel scouts to adopt an aggressive reconnaissance technique. It does not specify (perhaps because it is impossible) how the scout platoon maintains contact with the enemy's lead elements, hands them off to the advance guard and gets deep into enemy formation at the same time.

Like the meeting engagement, the battalion assault task demands some unrealistic standards. For example, during an assault the task force must succeed in the critical task of finding enemy weaknesses, antitank weapons, fire sacks, platoon positions, and flanks. It must locate natural obstacles, possible routes, and overwatch and support by fire positions. It must accomplish this in one hour without decisive engagement and without losing more than 5 percent of its combat strength.[93] This is not a realistic standard for reconnaissance success.

FM 17-98, Scout Platoon, lacks clarity in three areas. First, it is not clear for whom the scout platoon leader works. Although he ultimately works for the battalion commander, the S-3 employs him, the S-2 tasks and controls him, and the headquarters company commander rates him. Second, FM 17-98 does not discuss in detail the reconnaissance augmentation assets that may work for or with the scout platoon leader. Last, the manual does not resolve the debate between stealth and aggressive reconnaissance. It acknowledges that being equipped with HMMWVs suggests a stealthy approach but it claims, ". . . mounted reconnaissance is one of the most frequently employed methods."[94] Scouts remain mounted when their time is limited, and they can avoid contact

because they know enemy and obstacle locations.[95] Seldom at the NTC or in war do scouts have such precise information prior to starting their mission.

Possible solutions to FM 17-98's deficiencies include an explanation of the scout platoon leader's special relationship with the battalion staff, particularly with the S-2. The manual should familiarize the platoon chain of command with the assets they receive habitually to improve home-station training. Finally, the document requires a more comprehensive discussion of when stealth, aggressive, or both techniques are appropriate.

Doctrine has not resolved how to resupply reconnaissance forces. At the task force level, for example, the headquarters company first sergeant, executive officer, or the support platoon leader may lead the LOGPAC that resupplies the scout platoon. The scout platoon may link up with the LOGPAC at a designated point forward of the main body or share a site with the nearest company. FM 17-98 calls for the scout platoon sergeant to help the platoon leader direct the reconnaissance effort, yet the platoon has no supply sergeant to coordinate logistics. The supply trucks that support the scout platoon are vulnerable and are often unable to reach the scouts in their advanced locations. Before the organization and equipment aspects of this deficiency can be solved, the Army must decide how it wants to conduct scout platoon sustainment(including all reconnaissance augmentation assets).

R&S plans can be no better than FM 34-80, Brigade and Battalion Intelligence and Electronic Operations, the manual that explains how to produce them. The RAND study found the discussion of R&S plans in this manual lacking in detail.[96] The sample R&S plan does not meet the ARTEP 71-2-MTP standard.[97] RAND identified three other deficiencies in this

29

document: the IPB process is defense oriented, it does not fully explore the use of non-scout reconnaissance assets, and it does not consider how electronic warfare assets might be used at task force level.[98] TRADOC has not updated this manual since 1986.

TRADOC should update its doctrinal literature to reflect lessons learned concerning effective reconnaissance documented in the RAND and CALL studies, NTC take home packages, and DESERT STORM after-action reports. It should commission RAND to conduct a follow-up analysis on reconnaissance trends at the NTC. FM 100-5 should state emphatically the linkage between effective reconnaissance and successful offensive operations. FM 71-3 should incorporate some of the details on conducting effective reconnaissance contained in FM 17-95. However, both of these manuals and FM 34-80 need to explain in greater detail the mechanics of reconnaissance and surveillance planning, preparation, and execution. The discussion of this process must be consistent in all of the manuals. The mission training plans need more realistic standards for reconnaissance success. These manuals should reflect an appreciation for the capabilities and limitations of scout platoons and the time required to reconnoiter using stealth. MTPs should include subtasks that suggest that units commit whatever combat power is necessary to accomplish critical reconnaissance tasks before initiating deliberate attacks. FM 17-98 needs to clarify the scout platoon leader's relationship to his chain of command, suggest when scout platoons employ an aggressive or a stealth technique, and how these two techniques complement each other. All literature from FM 100-5 to FM 17-98 should address how units sustain continuous reconnaissance operations. A thorough review and update of doctrinal manuals will provide the foundation for improved reconnaissance performance.

Organization and Equipment

The U.S. Army heavy brigade's consistent inability to perform effective reconnaissance is due partially to the lack of robust, adequately equipped organizations, and intelligence command and control capabilities. Scout platoons and intelligence staff sections have both organizational and equipment deficiencies. Equipment deficiencies exist in communications, night and long-range observation, and fire support. Solutions are considered for each deficiency.

TRADOC force designers have not organized or equipped task force scout platoons to accomplish their tasks and survive. For example, DESERT STORM scout platoons were equipped with HMMWVs, CFVs, M113s, and M901s in various combinations. The Tait report provides a detailed account of how each of these vehicles performed. It concludes that HMMWVs, M113s, and M901s did not have a mobility differential over the main body during the movement to contact. They simply drove to stay ahead, rather than conducting effective reconnaissance. HMMWVs did not survive chance contact with enemy security forces, obstacles, near-miss friendly artillery, or unexploded ordnance. Consequently, most commanders relegated HMMWVs to flank coordination.[99] The CFV was the only vehicle that provided both a mobility differential and was survivable.

To correct the deficient scout platoon organization, brigade and battalion commanders recommend TRADOC design the platoons to include both HMMWVs and CFVs.[100] The Tait group recommends a task force scout platoon of six HMMWVs, five CFVs, and four motorcycles.[101] With additional "dismountable" scouts for continuous operations, this mixed organization could employ both stealth and aggressive reconnaissance techniques on a complementary basis.

Army Material Command can improve both the CFV and HMMWV as scout platforms with the addition of several components: a global positioning system (GPS), a vehicle compass, a laser range finder (LRF), a combination handheld/driver's night sight, and an identification friend or foe (IFF) device.[102] The GPS demonstrated its effectiveness as a navigation aid during DESERT STORM. A vehicle compass acts as a backup to the GPS and allows scouts to check azimuths on the move. An LRF would improve CFV fire control, the accuracy of reporting enemy locations and the precision of fire support. Scouts could use a hand held laser rangefinder such as the AN-GVS5 at dismounted OPs. A thermal viewer or second-generation, forward-looking, infrared radar (FLIR), would assist scouts at OPs, or vehicle drivers when underway. These limited-visibility sights would give scouts a capability at least comparable to M1 series tank units. The Army is developing the Battlefield Combat Identification System (BCIS) using both millimeter wave and ultra high frequency to protect vehicles from ground or air fratricide.[103] This protection is particularly important for reconnaissance forces who routinely operate forward of the main body during ambiguous battlefield situations.

If the CFV is acceptable as an aggressive reconnaissance platform, TRADOC combat developers should design a future scout vehicle (FSV) to be a suitable stealth performer.[104] Such a vehicle, known as "Hunter", was conceived by the Rapid Force Projection Initiative. Developed as an advanced technology demonstration (ATD), researchers intend for this vehicle to carry scout sensors, light armor, antitank self-protection armament and integral IFF.[105] The Hunter vehicle will carry two additional ATDs, the Scout Sensor Suite and the Remote Sentry. The Scout Sensor Suite will have multi-target acquisition and detection capability using a second-generation FLIR and acoustic sensors. Scouts can dismount this

32

suite or use it as an integral part of the Hunter vehicle on the move.[106] The Remote Sentry is a lightweight, autonomous, ground surveillance sensor with limited-visibility optics. It employs both imaging (television and FLIR) and non-imaging (acoustic, magnetic, and seismic) sensors that transmit to a vehicle's secure SINCGARS.[107] The Hunter vehicle will carry two to four sensors for placement on the battlefield. The U.S. Army should spend the money to move the Hunter and its associated sensors from ATD to prototype for further testing. Only with a vehicle of the Hunter's capabilities will tactical commanders be able to perform deep reconnaissance missions employing stealth.[108]

The Tait report records a consensus by brigade commanders for brigade scout platoons. Interviews with brigade commanders who have had peacetime training experience in the United States or Europe, or wartime experience in the Vietnam or Southwest Asia, produce similar results. Some brigade commanders want their scout platoon to enhance battle command rather than conduct close reconnaissance. The platoon would function as a "directed telescope".[109] If the brigade scout platoon tracks the brigade's progress in the zone of action, the task force scouts could focus on and beyond the objective.[110] Other brigade commanders feel that the exchange of "deep targets" often breaks down between division and task force scouts. Therefore, they want a brigade scout platoon to observe deep NAIs allowing task force scouts to concentrate on the brigade close fight. The brigade commander could use his platoon to weight the main reconnaissance effort, replace killed task force scouts with identically trained, brigade scouts, or observe the gap between the cavalry squadron and the task forces. They all agree that the organization should have a mix of CFVs, HMMWVs, and motorcycles. Brigade commanders would organize and train all scout platoons within the brigade in an identical manner.[111]

These mixed scout platoons would add flexibility, agility, survivability, and redundancy to brigade offensive reconnaissance missions.

Ineffective reconnaissance is traceable in part to communications equipment currently in use within heavy brigades. The current family of radios is both unreliable and short ranged (15-25 kilometers). These radios restrict the scope of the reconnaissance force. The reliable, 35 kilometer-range Single Channel Ground and Airborne Radio System (SINCGARS) has performed better than its predecessors, but still relies on line of sight. The reconnaissance force needs enough quick-erect, long-range antennas, and radio retransmission or relay support to ensure continuous communications in compartmented terrain. In extremely restricted terrain or over extended distances, the reconnaissance force commander and the brigade and battalion commanders may need tactical satellite radios (TACSAT) to talk.

The lack of robustness of the heavy brigade intelligence command and control system also contributes to ineffective reconnaissance. TRADOC wants to harness information age technology to help solve the brigade commander's problem of visualizing the battlefield. It envisions an Army Battle Command System (ABCS) that broadcasts battlefield information through digitization, the real-time exchange of tactical data between different elements of the combined arms team. ABCS will broadcast enemy and friendly dispositions, graphic control measures, and terrain features. Commanders will maintain hierarchical control of operations orders. All users will be able to access internetted carousals for intelligence. Advanced intelligence systems will feed ABCS with precise enemy positions, posture and activities.[112]

ABCS enables elements of the reconnaissance force to share information internally, with other units, and with the controlling

headquarters faster than in the current system.[113] This real-time information sharing also enables attacking units to adjust the direction of attack enroute to the objective to attain decisive advantage over the enemy. The hardware that will transmit ABCS via SINCGARS to individual vehicles may resemble the intervehicular information system (IVIS)[114] now being tested by units at Fort Hood, Texas. ABCS will help commanders visualize the battlefield so they can focus the reconnaissance effort, assess friendly and enemy situations, and concentrate combat power on enemy weakness.

With current technology, processing information received primarily by radio into a common intelligence picture, then producing and disseminating the various intelligence products, is labor intensive. At 80 percent average strength, S-2 sections cannot do this fast enough to help the commander make tactical decisions.[115] The table of organization and equipment authorizes a major, a captain, and a first lieutenant for brigade S-2 sections. The average section contains only two of the three authorized officers, and 40 percent of the brigade S-2s are captains rather than majors.[116] Organizational solutions include fully staffing S-2 sections and augmenting the sections with enough liaison soldiers to carry the intelligence products to higher and lower headquarters. The Total Army Personnel Agency (TAPA) should fill all intelligence officer positions authorized within the heavy brigade with officers of the maximum authorized rank allowable. S-2s could then spend more time coordinating staff intelligence interaction and directing the reconnaissance effort. Even ABCS will not replace soldiers collecting, analyzing, and distributing intelligence.

Brigade commanders have no organic capability to see the gap between task force scouts and division cavalry. Either task force scouts must

extend themselves to the maximum radio and fire support range to cover this space, or division must augment brigades with long-range reconnaissancenaissance assets. Technological innovation can help solve this problem. The Nightstalker Surveillance System, is a tactical, multi-sensor, ground surveillance replacement for GSR. It can "detect, positively identify, and precisely locate moving targets up to 20, 17 and 10 kilometers respectively."[117]

The brigade commander has no organic reconnaissance asset that would allow him to "see deep" from the air. The ability to see over the next terrain feature will not only increase the tempo of the reconnaissance force, but also provide a deep surveillance capability should the unit fail to penetrate the objective area. Unmanned aerial vehicles (UAVs) controlled by the brigade S-2 or by the scout platoons add this vertical dimension. The Tait report compliments the performance of the Pioneer, a 150-kilometer range UAV. The report recommends the U.S. Army equip the division MI battalion with it.[118] Divisions could make Pioneer available to brigade commanders for certain missions.

A more appropriate UAV for the brigade commander is the Pointer, a hand-launched, video-imaging aircraft with a 5-kilometer range.[119] This UAV would let the commander see over the next terrain feature, or beyond the objective should the reconnaissance force fail to penetrate. Scout platoons could control Pointer with little support structure. As an organic asset, it would guarantee the commander control of some vertical reconnaissance capability.

Fire support equipment deficiencies prevent the brigade commander from pushing his reconnaissance force far enough forward to close the gap with the cavalry squadron. The necessity to remain within the range of direct support artillery limits heavy brigade reconnaissance forces. For

the M109A2 or A3 howitzer, this limit is about 12 kilometers forward of the main body (two-thirds of the howitzers' 18.1 kilometer conventional-ammunition range). The Army will extend this range to about 16 kilometers with base-bled ammunition in existing howitzers, or with the M109A6 Paladin's new cannon. The use of a GPS and LRF to pinpoint the enemy's location improves the precision of calls for fire. If a COLT or FIST vehicle is part of the reconnaissance force, it can transmit the call for fire digitally, thereby increasing the responsiveness of the fire support.

When it is necessary to push the brigade's "eyes" beyond the range of the supporting artillery, as was frequently done during DESERT STORM, the brigade or task force commander often attached the heavy mortar platoon (or a section) to the reconnaissance force. Operating on the reconnaissance force's internal net, mortar platoons were very responsive to scout calls for fire. Unfortunately, mortars are far less lethal than howitzers. Technological enhancements that would increase mortar lethality while reducing the ammunition resupply rate are precision guided mortar munitions (PGMM) and improved fire control. As an ATD initiative, PGMM will incorporate infrared and millimeter wave sensors, laser designators, and fiber optics guidance systems for top-attack antiarmor warheads.

Training

Weaknesses in conducting reconnaissance operations are traceable to deficiencies in leader and collective training. Although institutional training has improved since 1987, there are still many deficiencies in training for scout platoon leaders, S-2s and battalion and brigade commanders. Units anticipating CTC rotations often do not have the time or resources necessary for quality reconnaissance collective training.

Scout platoon leaders have both IPB and battle command problems. They do not translate enemy event and situation templates into templates useful to the platoon. They lack understanding of battlefield area evaluation, particularly terrain and weather analysis. Finally, they have trouble commanding their platoons when augmentation increases its size and complexity.[120]

Considering recommendations of the RAND study, the U.S. Army Armor Center developed a Scout Platoon Leader Course (SPLC) that has improved the quality of these leaders.[121] Specifically, NTC O/Cs have noticed a general improvement in the knowledge of scout platoon leaders. SPLC should adjust the program of instruction to improve scout platoon leaders' understanding of the IPB process, and how to lead their platoons when augmentation makes them large and complex. Intelligence sections could help scout platoon leaders by producing products detailed sufficiently for scout platoon operations (situation templates for each assigned NAI, for example). This would reduce the scout platoon leader's planning time, thus allowing him more time to execute the mission.

The intelligence officer basic and advance courses still lack instruction on tactical reconnaissance methods, R&S planning, and terrain and weather analysis of the IPB.[122] When S-2s arrive at brigade or battalion unable to perform effectively in these areas, they lose credibility with the commander and S-3. The U.S. Military Intelligence Center has not acted on a RAND recommendation to offer an S-2 course providing needed background in these specific areas.[123] There are three feasible solutions. First, TRADOC should develop an S-2 course similar to SPLC. Second, units should send those officers who do not attend the S-2 course to the 11th Armored Cavalry Regiment OPFOR Academy to learn the OPFOR's effective IPB and reconnaissance techniques. Third, commanders

38

and S-3s, who are senior to and more experienced than S-2s, should develop a close working relationship with, help train, and mentor S-2s.

Even though the pre-command course has increased its emphasis on reconnaissance, O/Cs observe a lack of clarity in commanders' intent statements, lack of specificity in PIRs, and lack of involvement in resourcing and focusing reconnaissance. According to Lieutenant Colonel Myron J. Griswold, a fellow in the Advanced Operational Art Studies Fellowship,

> [An] examination by U.S. Army Training and Doctrine Command (TRADOC) of the curriculum for all Army officer courses from basic through the U.S. Army War College, is necessary to determine the adequacy of existing instruction on the important subjects of commander's intent and visualization of the battle.[124]

The RAND study concluded that method-oriented reference material concerning the mechanics of R&S planning would also help commanders.[125]

Another explanation why the reconnaissance success rate has not improved despite improvements in doctrinal literature and institutional training is the amount of time units have to prepare for NTC rotations. In 1987, for example, the average brigade could train for six months before arrival at the NTC. The average last year was two and one half months.[126] Because the number of brigades has declined, the Army has had to commit a large percentage of the remainder to deployments worldwide. Brigades have been unable to protect the valuable training time they used to enjoy before rotations.

Even if divisions cannot offer brigades a half year to train for CTCs, they can improve home station training of reconnaissance forces in two ways. First, divisions should establish habitual augmentation relationships by making these units available for regularly scheduled, brigade collective training. Second, divisions should provide brigades with an OPFOR as aggressive and as well trained as their NTC counterparts.

The OPFOR should be proficient enough to defeat units employing poor reconnaissance techniques or intelligence collection procedures.

Brigades can improve their preparation for CTC rotations and war by conducting comprehensive brigade reconnaissance exercises at home station. Brigade and battalion commanders should practice composing intent statements, focusing the reconnaissance effort, and visualizing the battlefield. Their participation would emphasize to the entire command the importance of the reconnaissance effort. Staffs would practice planning, preparing, supervising, and sustaining the reconnaissance effort. A principle training objective would be to conduct R&S rehearsals with full participation by commanders and staffs, either as part of the brigade operations rehearsal or immediately following it. The entire communication network should be exercised including situations requiring relay, retransmission and field expedient measures to reestablish radio contact. Training at doctrinal distances against a determined OPFOR builds reconnaissance force proficiency and cohesion while challenging tactical communications and logistics.

V. Conclusions

This study examined what U.S. Army heavy brigades should accomplish when conducting reconnaissance during offensive operations, what they actually accomplish, and why there is a shortfall. Doctrinal literature from the capstone "how to" manual FM 100-5, Operations through FM 17-98, Scout Platoon establishes what brigade reconnaissance should accomplish. The 1987 RAND analysis, the 1988 CALL studies, NTC take-home packages from 1991-1993, the 1993 Tait Group papers and other DESERT STORM documents identify the discrepancy between expectation and performance. Deficiencies in doctrine, organization, equipment, and training contribute to the problems brigades have conducting effective reconnaissance.

40

The brigade commander focuses the reconnaissance effort by stating clearly his intent, PIRs, and the objective. The brigade staff plans, prepares, and supervises the execution of reconnaissance in accordance with the commander's intent. The S-2 plays the biggest role in synchronizing the reconnaissance effort. He develops PIRs and IRs, sequences information collection tasks, recommends to the brigade commander which assets are necessary for the reconnaissance effort, and requests information from division for requirements beyond the brigade's capability.

Successful reconnaissance operations incorporate six fundamentals and employ one of four methods. The fundamentals are: placing maximum reconnaissance forward, orienting on the reconnaissance objective, rapid and accurate reporting, freedom of maneuver, gaining and maintaining contact, and developing the situation. Reconnaissance patrolling, reconnaissance by fire, reconnaissance in force, and armed reconnaissance are the methods described in doctrinal manuals. Reconnaissance is most effective when it combines aggressive techniques to force the enemy to react and stealth techniques to observe the reaction. Reconnaissance forces must detect enemy locations, activities, obstacles, and fire sacks as well as routes for friendly forces to take to exploit the enemy's weaknesses. They must survive to accomplish this mission.

Understanding how potential adversaries build security zones and conduct counterreconnaissance operations helps reconnaissance forces accomplish their mission and survive. Russian trained enemies construct 15 kilometer security zones when defending out of contact and 8 to 12 kilometer zones when defending in contact. Both methods employ a combination of stationary defenses protecting main avenues of approach with mounted patrolling between the defensive positions. U.S. trained

adversaries combine stationary OPs, often augmented by GSR and COLTs, and an armored forces to detect and destroy the enemy reconnaissance vehicles.

Brigade commanders may task assets in each of seven BOS for the reconnaissance force. Scout platoons, mechanized infantry companies, tank companies, or aviation companies may provide the headquarters for the reconnaissance force. They can be augmented with GSR sections, EW teams, division cavalry troops, UAVs, COLTs or FISTs, OH58Ds, engineers, air defenders, chemical reconnaissance squads, and retransmission or relay teams. LNOs, LOGPACs, aerial resupply crews, and pilot in-flight reports provide valuable information when properly briefed by S-2s.

The 1987 RAND study statistically correlated effective reconnaissance and successful offensive operations at the NTC. Reconnaissance was effective only 8 percent of the time. Commanders tended not to use many of the additional reconnaissance assets available to them and often squandered the precious element of time. When reconnaissance was effective, offensive operations succeeded 70 percent of the time. Commanders did not employ indirect fires or aviation effectively to enhance their reconnaissance efforts. The more assets the commander committed to the reconnaissance effort, the greater its chance for success. Engineers, in particular, improved the effectiveness of reconnaissance. Reconnaissance forces received R&S plans prior to execution 42 percent of time. They rehearsed only 19 percent of their missions. In only one third of the missions did the reconnaissance force establish OPs on the objective in time to help the commander focus combat power. The more time the reconnaissance force had, the more likely it survived enemy counterreconnaissance and accomplished the mission.

The 1988 CALL studies concluded that 25 percent of reconnaissance missions were effective. Successful offensive operations followed

effective reconnaissance about 80 percent of the time. CALL determined 73 percent of units distributing timely R&S plans succeed, while 82 percent of those who do not, fail. CALL also studied scout survivability in 1988 and found that only 50 percent survive the mission, regardless of whether they were HMMWV or CFV mounted.

The NTC trend from October 1991 to March 1993 reveals that while the reconnaissance success rate remains 25 percent, 90 percent of the offensive operations that follow effective reconnaissance are successful. The commander and each staff member are partly responsible for the low reconnaissance effectiveness rate. The staff officer most responsible for reconnaissance, the S-2, lacks understanding of both enemy and friendly strengths and weaknesses. Consequently, he recommends to the commander PIRs that are not specific enough to focus the reconnaissance effort. R&S plans S-2s develop lack detail, over-task reconnaissance forces, and are usually late. During execution, reconnaissance elements either lose communications with their S-2s, or inundate them with imprecise reports. S-2s do not supervise their under strength sections to achieve peak efficiency.

Despite the problems S-2s experience, commanders or other staff members seldom help. S-3s do not plan for scout regeneration while the offensive operation is in progress. They do not commit enough forces to the reconnaissance effort to ensure success. S-1s and S-4s do not regenerate or resupply reconnaissance forces between missions. The commander and all staff members fall short in R&S rehearsal participation.

Finally, commanders create ad hoc reconnaissance organizations to improve their intelligence collection capability. While these organizations provide temporary solutions, commanders rely too much on

them. The ad hoc reconnaissance forces lack cohesion and are difficult to sustain.

The reason heavy brigades conduct effective reconnaissance so infrequently is traceable in part to deficiencies in doctrine, organization, equipment, and training. Although doctrinal literature acknowledges the relationship between effective reconnaissance and successful offensive operations, much of its guidance either lacks detail, consistency, or realism. TRADOC should update its literature to incorporate the valuable NTC lessons learned that RAND and CALL analyzed in 1987 and 1988, and lessons emerging from DESERT STORM.

As currently equipped, task force scout platoons cannot survive if they use aggressive reconnaissance techniques. They also lack adequate radios, navigation aides, precision range finders, night observation devices, sensors, and aerial observation platforms. New technologies that will enhance scout platoons include BCISs, a fratricide protection transmitter; Hunter, a stealthy future scout vehicle; Nightstalker, a new GSR; a variety of improved sensors; and PGMM to increase mortar accuracy and lethality.

General Thomas Tait's DESERT STORM study group recommends that TRADOC design scout platoons of six HMMWVs, five CFVs, four motorcycles, and additional scouts who can dismount. The consensus among brigade commanders is that TRADOC should make a scout platoon organic to the brigade and organize it identically to the task force scout platoon to ease interoperability and training. Some brigade commanders would use their platoon to see deep, while others would use them to record the brigade's progress during the offensive operation.

Digitization will help commanders visualize the battlefield through broadcasting near real time friendly and enemy dispositions. With

hardware such as IVIS, individual vehicles can exchange rapidly tactical data, orders, and graphics. S-2s can distribute R&S plans to the reconnaissance force in time for a rehearsal before movement. Technology alone is not the answer to intelligence command and control. Intelligence analysis and products are labor intensive. TAPA should fill all soldier and officer positions in task force and brigade intelligence sections. Further, TAPA should fill brigade S-2 positions with majors to ensure that the staff officer with primary responsibility for reconnaissance has the experience he needs to excel.

Institutional training for battalion and brigade S-2s does not prepare them for their commander's expectations. TRADOC should develop an S-2 course to address the mechanics of the job, similar to the Scout Platoon Leader's Course which has improved scout platoon leaders' performance in the five years since its inception. The greatest training challenge brigades face is to develop innovative training plans that improve the cohesion of the reconnaissance force; intelligence collection, processing, and dissemination; and sustainment.

As the U.S. Army decreases in size, the need increases for commanders to focus combat power at the decisive place and time. To do this, commanders must direct their reconnaissance efforts to help them see the battlefield. Commanders and staffs realize there is a causal relationship between effective reconnaissance and successful offensive operations. Despite this awareness, NTC and DESERT STORM performance demonstrates weaknesses in heavy brigade reconnaissance which can be attributed in some degree to the preceding deficiencies in doctrine, organization, equipment, and training. In light of these deficiencies U.S. Army heavy brigades are today only marginally capable of conducting effective reconnaissace during offensive operations.

ENDNOTES

1. Headquarters, Department of the Army, FM 101-5-1, Operational Terms and Symbols, (Initial Draft, January 1994), p. 1-195.

2. If the reconnaissance mission is directed to obtain detailed information about the enemy or terrain within a prescribed area, the U.S. Army defines it as area reconnaissance. If the effort is directed against a specific terrain feature or enemy facility, it is a point reconnaissance. When the situation is vague concerning the enemy or maneuverability, units conduct zone reconnaissances. This is a directed effort to obtain detailed information concerning all routes, obstacles, chemical or radiological contamination, terrain, and enemy force within a zone prescribed by boundaries. DOD and NATO have agreed to a common definition for route reconnaissance: "reconnaissance along a specific line of communication, such as a road, railway, or waterway, to provide new or updated information on route conditions and activities along the route." (FM 101-5-1,1-95)

3. Offensive operations are combat operations designed primarily to destroy the enemy. They may be undertaken to secure key or decisive terrain, to deprive the enemy of resources or decisive terrain, to deceive and/or divert the enemy, to develop intelligence, and to hold the enemy in position. Offensive operations include movement to contact, attack, exploitation, pursuit, and other limited objective operations. The offense seizes, retains, and exploits the initiative.(FM 101-5-1, p. 1-169.)

4. Headquarters, Department of the Army, FM 100-5, Operations, (June 1993), pp. 7-11, 7-4, 8-5, 6-15.

5. Headquarters, Department of the Army, FM 17-95, Cavalry Operations,(September 1991), p. 1-2.

6. Headquarters, Department of the Army, FM 71-100-1, Armor and Mechanized Division Operations: Tactics and Techniques, (Coordinating Draft, May 1991), p. 3-10.

7. Headquarters, Department of the Army, FM 71-123, Tactics and Techniques for the Combined Arms Heavy Forces: Armored Brigade. Battalion/Task Force, and Company/Team, (September 1992), p. 2-50.

8. Headquarters, Department of the Army, FM 34-8, Combat Commander's Handbook on Intelligence, (September 1992), p. 1-2.

9. Headquarters, Department of the Army, FM 100-6, Information Operations (Coordinating Draft, 22 July 1994), p. 5-2.

10. Ibid, pp. 34-8, p. 3-4.

11. FM 71-100-1, p. 3-11 - 3-14.

12. FM 71-123, p. 2-50.

13. FM 71-100-1, p. 3-14.

14. FM 71-123, p. 2-50.

15. Surveillance is an integral part of the reconnaissance mission. It is, "a systematic observation of airspace, surface, or subsurface areas, places, persons, or things by visual, aural, electronic photographic, or other means."(FM 101-5-1, 1-223.) This definition is also standard in DOD and NATO. Surveillance collects information continuously from air and land. (FM 100-5, 2-19). Although reconnaissance and security are considered together as part of the battlefield framework, they are not the same. Some confuse "reconnaissance and security" with "reconnaissance and surveillance." Security is an operation which includes screening, guard, covering force, and area security operations. Like reconnaissance, these operations obtain information about the enemy. However, the purpose is to provide reaction time, maneuver space, and protection to the main body rather than to find the best way to close with and destroy the enemy or seize key or decisive terrain.(FM 101-5-1,1-210.) Security operations are not within the scope of this monograph. The object of reconnaissance operations is to acquire information about the enemy while the object of security operations is to deny enemy reconnaissance information about friendly forces.(FM 71-100-1, 3-10.)

16. FM 71-100-1, p. 3-11.

17. Ibid, p. 3-14.

18. FM 71-123, p. 2-51.

19. FM 17-95, p. 3-3.

20. Ibid, p. 3-3 , 3-4.

21. Ibid, 3-2.

22. Aggressive reconnaissance is a technique. It does not describe the amount of risk a unit accepts in conducting the mission. Soldiers sometimes confuse aggressive reconnaissance with reconnaissance in force which is a method of conducting reconnaissance. (FM 101-5-1, p. 1-196).

23. FM 17-15, p. 3-2.

24. MTP is designed to guide the training of a unit. It outlines the combat tasks necessary to win the engagement and fight again. It specifies the standard of performance for each task, p. 1-1.

25. Headquarters, Department of the Army, ARTEP 71-3-MTP, Mission Training Plan for the Heavy Brigade Command Group and Staff, (October 1988), p. 3-10. Movement to contact operations may employ various techniques: approach march, search and attack, reconnaissance in force and meeting engagement. There are also several types of attack: hasty attack,

47

deliberate attack, spoiling attack, counterattack, raid, feint, and
demonstration.(FM 101-5-1, pp. 1-158,1-159,1-196,1-151,1-21)

26. Headquarters, Department of the Army, ARTEP 71-2-MTP, Mission
Training Plan for the Tank and Mechanized Infantry Battalion Task Force,
(October 1988), p. 5-24. The scout platoon must report accurately the
location of the enemy lead elements and their activities and obstacles
soon enough for the advance guard commander to develop a scheme of
maneuver. The advance guard must deploy against the enemy before the
enemy detects it. The scout platoon must maintain contact, and, at the
same time, collect information on deeper enemy positions and formations.

27. Ibid, p. 5-27.

28. FM 17-95, p. 3-9.

29. Ibid, p. 3-9 - 3-11.

30. Ibid, p. i.

31. Ibid, p. 3-11, 3-12.

32. The NATO definition for operational control is the authority granted
to a commander to assign missions or tasks to subordinate commanders but
does not include responsibility for admin or log, FM 101-5-1, p. 1-171.

33. FM 71-123, p.2-53. Myron Griswold's comprehensive study of
counterreconnaissance concluded that 44 percent of the heavy task forces
training at the NTC fail this mission. During 83 percent of the missions
that fail, the OPFOR destroyed the task force. S-2's poor R&S planning and
the task force's failure to effectively use the assets available to it
contribute to the failure to detect, deceive, and destroy Soviet-trained
ground reconnaissance units. Understanding its own problems with
counterreconnaissance will help U.S. Army offensive reconnaissance succeed
against enemy it might have trained. Major Myron J. Griswold,
Counterreconnaissance Operations of the Heavy Battalion Task Force on the
AirLand Battlefield, SAMS Monograph, USACGSC, Fort Leavenworth, KS,
December 1985, pp. 34-36.

34. FM 71-123, pp. 2-53 & 2-54.

35. Though discouraged at the CTCs, task forces sometimes build a
reconnaissance force around a company or place the HHC commander in charge
of the various reconnaissance assets. If a number of these assets are to
work together as a single unit under brigade control, the brigade S-3 can
task a subordinate battalion force for the command and control structure,
usually a company, on which to graft it. As currently organized, the
brigade has difficulty controlling and supplying ad hoc reconnaissance
companies (FM 71-123, p. 2-51.)

36. Ground reconnaissance units work through deception and force the
enemy to react in all weather and light conditions. Although armor is
more commonly used in counterreconnaissance than offensive reconnaissance,

employing tanks along the axis to protect the reconnaissance force while it traverses the security area to penetrate the objective may be useful. Tanks could hunt screening forces and do some zone reconnaissance tasks while the rest of the reconnaissance force scouts the objective. (FM 17-95, p. 3-1.)

37. Martin Goldsmith with James Hodges, <u>Applying the National Training Center Experience: Tactical Reconnaissance</u>, (Santa Monica, CA: RAND Corporation, 1987), p. 5.

38. <u>Ibid</u>, p. v.

39. <u>Ibid</u>, pp. 14 and 16. Goldsmith's success criteria are less stringent than the standards ARTEP 71-3-MTP establishes. During a movement to contact, the brigade must destroy, capture, fix, or force the withdrawal of 90 percent of the enemy while preserving 80 percent of its combat power. In hasty and deliberate attacks, the brigade must compel the withdrawal of 100 percent of the enemy while retaining 50 percent strength. (FM 71-3-MTP, pp. 3-10 and 3-11.)

40. <u>Ibid</u>, pp. 16-21.

41. <u>Ibid</u>, pp. 21-25.

42. <u>Ibid</u>, p. 67.

43. <u>Ibid</u>, pp. 40-41.

44. <u>Ibid</u>, pp. 30-31.

45. <u>Ibid</u>.

46. <u>Ibid</u>, p. 46.

47. <u>Ibid</u>, pp. 34-35.

48. Tasks that are seldom assigned are terrain evaluation, trafficability, and assault route marking. Not surprisingly, units accomplish these tasks only ten percent of the time. (RAND, 1987, p. 36) The study did not explore why units almost completely neglect obstacle marking. If there is too little force to breach obstacles, then physically marking, as opposed to location reporting, becomes increasingly important.

49. <u>Ibid</u>, p. 36.

50. <u>Ibid</u>, p. 34-35.

51. <u>Ibid</u>, p. 37.

52. <u>Ibid</u>, p. 38.

53. Center for Army Lessons Learned, <u>Compendium</u>, (Fort Leavenworth, KS: CATA, 1988), p. 5.

54. Center for Army Lesson Learned, <u>Combat Training Centers (CTCs): Bulletin No. 93-4</u>, (Fort Leavenworth, KS: CAC, 1993), p. 4.

55. <u>Ibid</u>.

56. Headquarters, National Training Center, <u>Take-Home Packages</u>, (Fort Irwin, CA, October 1991 to March 1993), found in the Combined Arms Center Automated Archive, Fort Leavenworth, KS.

57. <u>Ibid</u>, The RAND study calculated the OPFOR correlation factor at 93 percent. (RAND, 1987, p. 9)

58. Although brigade and task force S-2s demonstrated an understanding of doctrine and the interrelationships of intelligence products while being observed at the NTC, they were better at defense than offensive operations. This is not surprising considering the U.S. Army's Cold War orientation until 1989. The understanding of the intelligence preparation of the battlefield process has improved every year since the NTC opened. National Training Center Observation Division, Center for Army Lessons Learned, Sphinx Team, <u>2nd Quarter, Fiscal Year 93 Trends</u>, (Fort Irwin, CA: April, 1993) p. 6.

59. <u>Ibid</u>.

60. <u>Ibid</u>.

61. <u>Take-Home Packages</u>, October 1991 - March 1993. An NAI is a point on the ground along a particular avenue of approach, through which enemy activity is expected to occur. Activity or lack of activity within an NAI will help confirm or deny a particular enemy course of action (FM 101-5-1, p. 1-161.)

62. Sphinx Team, <u>3rd Quarter Fiscal Year 92 Trends</u>, p. 2.

63. <u>Take-Home Packages</u>, October 1991 - March 1993.

64. A unit during DESERT STORM established a blocking position astride the Kuwait City - Basra Highway despite losing communications with its parent division during DESERT STORM. It reestablished contact through one of the brigades. This is good initiative on the part of the squadron, but poor planning by the division signal officer. Although how far the squadron reconnoiters in front of the division is not specified in FM 71-100-1, 25 kilometers in the desert is a reasonable distance and should be supportable.

65. Myron J. Griswold, "Focusing Combat Power: Seeing is Winning," <u>Military Review</u>, July 1994, p. 71.

66. Sphinx Team, <u>2nd Quarter, Fiscal Year 93 Trends</u>, p. 10.

67. Ibid, p. 11.

68. Take-Home Packages, October 1991 - march 1993.

69. Ibid.

70. Ibid.

71. Ibid.

72. Major Joseph C. Barto, III, Task Force 2-4 Cav - "First In, Last Out: The History of the 2d Squadron, 4th Cavalry Regiment, During Operation Desert Storm, (Fort Leavenworth, KS: USACGSC, 1993), p. 44.

73. Ibid, p. 62.

74. U.S. Army doctrine describes three levels of rehearsals. Level I is a small scale rehearsal using terrain models, sand tables, or a map. A Level II rehearsal is conducted in wheeled or tracked vehicles over terrain similar to the zone of action.   Level III is a full scale rehearsal involving real-time mounted and dismounted units on actual or similar terrain.   (FM 71-123, p. 2-39)   The participants in these rehearsals is directed by type: Type D is only the commander, S-2, S-3, fire support officer (FSO), air liaison officer (ALO), and subordinate commanders. Type C adds key combat support (CS) unit commanders to the rehearsal. Type B adds the executive officer, subordinate FSOs, all CS commanders, and the scout and mortar platoon leaders. Finally, Type A rehearsals include all of the above participants plus all primary staff, the battalion maintenance officer, FISTs, and all special platoon leaders. (FM 71-123, p. 2-40) Doctrine considers R&S rehearsals to be "special" rehearsals conducted as time allows. The example in FM 71-123 shows the R&S rehearsal as a Level II, Type D with only the patrolling portion of the plan being practiced. Ibid.

75. Sphinx Team, 1st Quarter, Fiscal Year 1995 Trends, p. 5.

76. Take-Home Packages, October 1991 - March 1993.

77. Sphinx Team, 4th Quarter, Fiscal Year 92 Trends, p. 9.

78. Take-Home Package.

79. Memorandum for all soldiers of 2d Battalion, 70th Armor, Subject: After-Action Report, Operation DESERT VIPER, 24 FEB-01 MAR 91, dated 5 June 1991, p. 2-3.

80. Ibid, pp. 1-2 and 1-3.

81. Ibid, p. 1-3.

82. FM 100-5, p. 6-15.

83. Ibid, p. 8-4.

84. FM 17-95, p. 5-2.

85. Although not specified, the manual implies that the importance of reconnaissance is pervasive in all offensive operations. The manual does acknowledge that detailed reconnaissance of the enemy defensive positions is required for successful envelopments, the preferred form of maneuver (FM 71-3, p. 3-10). In planning night operations, it claims that reconnaissance is the most important element, (FM 71-3, p. 3-29).

86. The type of movement to contact heavy brigades are most likely to participate in is an approach march. Reconnaissance during approach marches confirms already known enemy locations. This was the case in DESERT STORM. The type of movement to contact described in FM 71-3 and its MTP is a reconnaissance in force. This is the least frequent type. Commanders conduct a reconnaissance in force when they have very little intelligence on the enemy. Such operations require a larger portion of the unit's combat power to perform reconnaissance tasks than for an approach march. Russian trained commanders commit up to third of their combat power to a reconnaissance in force. A heavy brigade employing only a company team as security force against a Russian-trained adversary in this type of movement to contact has little chance of success.

87. FM 71-3, p. 3-19.

88. Ibid.

89. ARTEP 71-3-MTP, p. 3-10.

90. Ibid, p. 3-11.

91. Ibid, p. 5-38.

92. ARTEP 71-2-MTP, p. 5-29.

93. Ibid, p. 5-27.

94. Headquarters, Department of the Army, FM 17-98, Scout Platoon, (September 1994), pp. 4-11, 4-6.

95. Ibid.

96. RAND, 1987, p. 52.

97. ARTEP 71-2-MTP, p. 5-114.

98. RAND, 1987, p. 42.

99. Operation Desert Storm Lessons Learned, Volume IV: Tactical, Gulf War Collection: Group Tait Papers found in the Combined Arms Center Archive, 1993, p. IV-1-5.

100. The U.S. Army can improve the CFV in many ways. Rear ramps need better armor and hydraulic rather than mechanical ramps. Exhaust needs to

be vented away from the vehicle commander. The reverse gear is too low and overheats quickly. Fire extinguisher systems often prematurely detonate. The Integral Sight Unit lacks an azimuth indicator which would assist gun orientation and reduce the potential for fratricide. Engine access doors have nagging hydraulic problems. (Tait Papers, P. V-1-17.)

101. Tait Papers, p. IV-1-5.

102. Ibid, p. IV-1-11.

103. Weapon Systems: United States Army 1994, (Washington, D.C.: OASA (RDA), 1994), p. 41.

104. The CFV was fast, reliable (operational ready rate of over 90 percent for entire campaign), and lethal during meeting engagements. The TOW II was effective at maximum range against all targets, but the 25mm was the weapon of choice. This weapon exceeded expectations by penetrating T55 tanks frontally and all newer tanks in the flanks. Iraqi defenders could only destroy CFVs with antitank weapons despite being penetrated by a variety of different types of ammunition, CFVs never burned. This minimized the crew casualties (Tait Papers, p. IV-11-7).

105. Weapon Systems, p. 215.

106. Ibid.

107. Ibid, p. 217.

108. Ibid, p. 215.

109. Martin Van Creveld, Command in War, (Cambridge, MA: Harvard University Press, 1985), p. 75.

110. The brigade scout platoon, when employed as the commander's directed telescope, could enhance command and control functioning much like the U.S. infantry regimental Intelligence and Reconnaissance (I&R) platoons of World War II, the commander could gauge his progress during offensive operations, restore communications with a battalion out of contact, tie in to flank brigades and better recon and mark the axis of advance. The latter function would free task force scouts to focus their effort on the objective area. The tempo of reconnaissance would increase if task force scouts could hand off bypassed enemy on axis to the brigade scouts. Once terrain and trafficability are analyzed, enemy and obstacles located, and the attack route marked, brigade scouts could establish OPs along the axis to report the brigades progress. This would enable the commander to keep the attack synchronized to the objective.

111. Tait Papers, p. IV-1-5.

112. Headquarters, U.S. Army Training and Doctrine Command, TRADOC Pam 525-5, Force XXI Operations, (Fort Monroe, VA: 1994), p. 3-4.

113. Ibid, p. 3-5.

114. Griswold, 1994, p. 71.

115. Take Home Package, n924bs1b.ttp.

116. CPT Paul Nakasone, distribution officer for MI branch claims that while 90 percent of battalion S-2s are now captains (the maximum allowable rank), only 60 percent of brigade S-2s are majors, their maximum rank. Once the rank structure is corrected, MI branch will try to assign the third officer position to the brigade S-2 section. (Telephone conversation 20 November, 1994)

117. Griswold, 1994, p. 71.

118. Tait Papers, p. VI-2-12.

119. Griswold, 1994, p. 71.

120. Sphinx Team, 2d Quarter, Fiscal Year 1993 Trends, p. 8.

121. Take-Home Packages, October 1991 - March 1993.

122. RAND, 1987, p. 68.

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56

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Interview Responses

Fontenot, Colonel Gregory. Director, School of Advanced Military
   Studies, Fort Leavenworth, Kansas. Colonel Fontenot as tank
   battalion commander during DESERT STORM and armor brigade
   commander designee, does not favor a brigade scout organization. He
   feels brigades could not control their own scout unit thus causing
   confusion in the objective area. During DESERT STORM, his scout
   platoon conducted mostly security missions, maintaining contact with
   the adjacent battalion and spanning the gap that developed. The scout
   platoon did conduct a sweep to confirm the disposition of enemy
   counterreconnaissance forces. Colonel Fontenot thinks scout platoons
   need better communications equipment.

McKiernan, Colonel David. 2d Brigade Commander, 1st Cavalry
   Division, Fort Hood, Texas. Colonel McKiernan was a tank
   battalion commander in Germany and is a brigade commander
   currently. He strongly supports brigade scout platoons.
   He recommends the brigade scout platoon be equipped to
   penetrate the security zone, survive the counterreconnaissance
   encounter, see beyond the objective, and communicate at

57

extended distances. He would direct these scouts to avoid
enemy contact. Colonel McKiernan believes task force scout
platoons should be equipped to fight for detailed information.
Existing scout platoons are inadequately equipped to conduct
aggressive reconnaissance. To coordinate all the assets that
normally constitute a battalion reconnaissance force, he feels
it should be commanded by a captain. The HHC commander is an
option but there is a logistics price to pay. For him, a line company
commander is a better option.

Sylvester, Brigadier General John, Assistant Division Commander
   (Maneuver) 1st Infantry Division (Mechanized). As an
   armored brigade commander during DESERT STORM, General
   Sylvester strongly supports a brigade scout platoon. He cannot
   recall task force scouts providing any real time intelligence
   during the battle. He feels this is due in part to their
   HMMWVs. He favors the LAV family of vehicles which he believes
   combined firepower (when LAV25s and LAV TOWs are used together)
   and stealth (due to LAVs quiet running gear.)

Wallace, Colonel J. Richard, Inspector General, Forces Command.
   As a former brigade commander in Germany, Colonel Wallace strongly
   supports the introduction of brigade scout platoons.
   Currently, brigades are not a reconnaissance operator. They
   must rely on the dialogue with task forces to assemble the
   enemy picture. The problem is that task force scouts (in the
   European theater) are effective only about four kilometers
   forward of the task force. When pushed out to seven
   kilometers, necessary to see beyond the objective, they become
   casualties. Colonel Wallace would use brigade scouts to both see deep,
   and as a directed telescope on the axis or zone of the brigade's
   main effort. Task force scouts should concentrate on the
   objective itself. Both battalion and brigade scouts must fight
   for information sometimes and rely on stealth to evade
   counterreconnaissance efforts. The HMMWV can't fight and the
   CFV is too loud to be stealthy. Colonel Wallace feels a future
   scout vehicle must combine these capabilities.

Zanini, Colonel Daniel R., Chief of Staff, Combined Arms Center.
   As a heavy brigade commander during DESERT STORM, Colonel Zanini
   found the need for a brigade reconnaissance organization to see
   deep. He prefers a UAV-equipped unit rather than a ground
   reconnaissance unit. Two of his task force scout platoons were
   equipped with CFVs and one with HMMWVs. He found the combination to
   be effective. He recommends that battalion scout platoons employ
   a mix of CFVs and HMMWVs. Unlike the Tait group recommendation,
   Colonel Zanini does not favor motorcycles.